

REMARKS/ARGUMENTS

Claims 1-5 and 7-29 are pending. Claim 1 has been amended to include the range limitation of claim 8, which was not rejected and the process steps of claim 1 now appear in claim 8. Claim 10 has also been revised to include this range limitation. Claim 20 has been revised incorporate the range limitation of claim 22, which was not rejected. The new range in claim 22 is described in the middle of page 6 of the specification. Claims 26-29 find support in [0025] on page 11 of the specification. Consequently, the Applicants do not believe that any new matter has been introduced. Favorable consideration of this amendment and the remarks below and allowance of this case are respectfully requested.

The Applicants thank Examiner Tsay for the courteous and helpful review and discussion on November 10, 2009 of draft claims tracking the amendments made above. The Examiner indicated that these amendments would avoid the remaining rejections, but advised the Applicants to proactively address the teachings of Schrooyen, et al., U.S. Patent No. 7,169,896, a new reference that had recently come to the Examiner's attention.

Commentary on Schrooyen, et al., U.S. Patent No. 7,169,896

Initially, Schrooyen do not suggest or provide a reasonable expectation of success for selection of a keratin raw material water content ranging from 20 to 80%, nor provide a reasonable expectation of success for the superior process obtained by making this selection. While the top of col. 4 of Schrooyen describes "cleaning, washing, sorting, defatting, cutting, milling, grinding, drying, or any combination thereof", there is simply no recognition that selecting a keratin raw material having a water content of 20-80% provides any benefit.

Moreover, as discussed below, while Schrooyen involves alkaline extraction, it describes a method for making a significantly different chemically-modified keratin product (one that is reduced and alkylated) that has different physical properties and which is made

by a method requiring reduction of disulfide bonds in keratin raw material and the subsequent modification (e.g., alkylation) of the sulphydryl groups produced by reduction. Thus, Schrooyen does not disclose “extracting a solubilized keratin from the supernatant that has an average molecular weight of 8,000 to 13,000 Da (as determined by a gel filtration method)”.

In distinction to the invention which simply requires “hydrolyzing in an alkali solution a keratin raw material having a water content ranging from 20 to 80% by weight”, neutralization, and subsequent extraction of the solubilized keratin, Schrooyen discloses chemically-modified solubilized keratins prepared from a keratin-fiber-containing material in an aqueous solution using a reducing agent at alkaline pH. In the Schrooyen invention, a reducing agent is used for the cleavage of the intra- and inter-molecular disulfide bonds (C) in the raw material keratin molecules, see col. 5, lines 3-10. Thus, the reducing agent creates free sulphydryl (-SH) groups in the solubilized keratin, see col. 3, lines 42-52 of Schrooyen, for example, which are subsequently modified by alkylation, see Abstract and claim 1.

Schrooyen discloses that the modified (reduced and alkylated) soluble keratin produced by this method has a more hydrophobic character providing a lower surface tension than unmodified, essentially intact, soluble keratin, see col. 9, lines 51-59. The Examples in this patent show that such a partially-solubilized keratin has film formation and adhesive properties.

On the other hand, while the method of the invention does require selection of a keratin raw material having a water content ranging from 20-80%, it does not require reduction and alkylation for keratin extraction and can produce a more natural and unmodified solubilized keratin that is not chemically modified.

### Objection

Claims 19-20 were objected to as informal. This objection is moot in view of the adoption of the Examiner’s kind suggestions.

Rejection—35 U.S.C. §102(b)

Claims 9 and 19 were rejected under 35 U.S.C. §102(b) as being anticipated by Arai, et al., U.S. Patent No. 5,763,583. This rejection is moot in view of the incorporation of the 8,000 to 13,000 Da range into claim 1 (from which claim 9 depends) and claim 10 (from which claim 19 depends).

Rejection—35 U.S.C. §103(a)

Claims 1-5, 7-21 and 23-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shiojima, et al., U.S. Patent No. 6,066,316, in view of Mullner, et al., WO 0236801, abstract. This rejection is also moot in view of the incorporation of the 8,000 to 13,000 Da range into these claims. (This limitation already appears in product claim 8 and process claim 22 which were indicated as being free of the prior art on page 9 of the OA.)

Objection

Claims 8 and 22 were objected to as depending from rejected claims, but otherwise in condition for allowance.

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Conclusion

This application presents allowable subject matter and the Examiner is respectfully requested to pass it to issue. The Examiner is kindly invited to contact the undersigned should a further discussion of the issues or claims be helpful.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.  
Norman F. Oblon

  
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Thomas M. Cunningham, Ph.D.

Registration No. 45,394

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 08/07)